

### **1.1.1 Asbestos Segregation Teams**

Asbestos segregation and removal was conducted on a total of 123 Category 2 PPDR properties, enabling the debris removal operations on the property to be conducted using normal procedures and equipment. Due to the number of PPDRs with ACM present within the debris, an asbestos segregation subcontractor was contracted to segregate and contain ACM located on Category 2 PPDRs. Two crews and a site manager were provided by Bhate Geosciences Corporation. Each crew was comprised of one foreman and 5-6 segregation personnel. Crew members wetted and removed all ACM by hand from Category 2 properties and placed the material within an approved polyethylene bag. The ACM was manifested and delivered to the Prairie View facility, an approved subtitle D landfill. Once the segregation and removal of ACM was completed, the Category 2 property was re-inspected by certified asbestos inspectors, and if the teams found no remaining ACM, the property was reclassified as a Category 1, and removal progressed in a normal fashion. Category 3 properties were deemed to be too heavily contaminated with ACM and not economically feasible to segregate. These properties followed removals as described in section 7.3.

### **1.1.2 Laboratories**

In order to maintain worker protection standards, samples were collected and analyzed for lead, asbestos, and dust. Two laboratories were utilized: EMSL and Gulf Coast Laboratory. EMSL provided analysis of personnel filter media, including: conducting PCM analysis by NIOSH method 7400; confirmation TEM analysis by NIOSH method 7402; and lead analysis by NIOSH method 7080. Gulf Coast provided analysis services for the baseline soil sampling at the Schifferdecker TDSR.

### **1.1.3 Previously Segregated ACM**

Prior to the arrival of the WESTON/P&J TEAM, a segregation contractor had identified and segregated ACM debris into 38 individual piles. The most significant ACM debris segregated is Transite™ cement panel and siding made with asbestos. WESTON provided USEPA-certified Asbestos Inspectors systematically went through each Sector in the damage zone to identify and document the location of the ACM piles and any other ACM debris. Each ACM debris location was marked with an “A” (red paint) on the adjacent street, marked with caution tape, photographed, and GPS coordinates recorded. Asbestos certified teams safely bagged the identified piles of segregated ACM and transported the materials to the Prairie View Disposal facility in the “burrito wrap” method described in section 7.3.1. Non-segregated RoW debris, meeting Category 3 criteria, were identified as described above and slated for removal operations using the ACM O&M Removal Plan (Attachment F).

### **1.1.4 Transportation of ACM Debris**

All trucks and trailers hauling ACM used the burrito wrap method for containing the material within the haul unit. The practice creates a sealed bag that will slide out of the haul unit in one piece at the landfill. Site best practices required that the plastic/poly used for the burrito wrap

be transparent or clear and a minimum of 6 millimeters thick. The wrapped material should retain its integrity during the trip to the landfill and prohibit any fugitive particulates from leaving the haul unit during transport. The plastic/poly was not glued or fashioned to the side of the haul unit in any way. After completing the loading process, the burrito wrap was sealed using spray adhesive and assessed for integrity, including no visible openings in the top/sides and that debris had not penetrated the plastic/poly.

### 1.1.5 ACM Disposal

A total of 2,414 CY of ACM were disposed of at the Prairie View facility, a subtitle D disposal facility permitted to receive regulated asbestos materials. Although not required by state or federal agencies, the ACM loads were documented using a bill of lading which was provided to the disposal facility and retained by WESTON personnel. The burrito wrapped material was deposited within a cell designated by the facility and covered with soil at the end of each work day to prevent any fugitive emissions.

## 1.2 WORKER PROTECTION AIR SAMPLING/MONITORING PROGRAM

Worker and public safety were paramount to the response team. Concerns regarding the presence of asbestos containing materials (ACM) within the debris derived from the Joplin Tornado were noted prior to the mobilization of resources. In addition to concerns regarding ACM, the storm-impacted area has been affected by lead mining operations in the past. The EPA has reportedly conducted remedial operations in the area and identified lead levels within project area soils as being above residential standards. Due to these factors, plans were developed to address the potential worker exposure, segregation, collection, and disposal. Site management engaged the Health and Safety Team to produce a worker protection air sampling/monitoring program.

### 1.2.1 ACM

Buildings constructed prior to 1980 commonly utilized construction material containing various forms of asbestos. The city of Joplin provided the USACE with data regarding the location and construction dates of residential properties within the storm path. The USACE and WESTON compiled the information into the site specific GIS project and identified areas to target for inspection. The USACE and WESTON inspectors conducted assessment of debris within the RoW of the project areas and reported that a portion of the private property and RoW debris contained ACM, primarily tiles used as siding (transite). Sectors 3 and 4 were reported to contain the highest level of debris and properties with ACM debris.

#### 1.2.1.1 Worker Exposure

Parameter	Monitoring Period	Methods	Number of Samples	Results Range
Asbestos	7 June- 17 July	NIOSH 7400 PCM & 7402	*615 Samples *Includes 10%	All sample 0.005 f/cc or less than detection limit*

		TEM	field blanks	
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*\*A single sample collected 7/3 read 0.013 f/cc due to dilution factor. Sample was diluted due to substantial amount of particulates on the filter.*

To determine the potential for worker exposure to respirable particulates containing asbestos fibers, the WESTON Certified Industrial Hygienist (CIH) conducted a negative exposure analysis (NEA) and developed a personnel air sampling program. Personnel exposure sampling for airborne asbestos fibers was accomplished using NIOSH Method 7400 with confirmation by Method 7402 when fiber counts are above 0.005 fibers/cc. Asbestos exposure monitoring sample results were confirmed using TEM analysis to discriminate between asbestos fibers and other fibrous debris common in demolition and debris hauling work sites.

#### ***1.2.1.2 Procedures for Limiting Worker Exposure***

Engineering controls and work practices implemented for this debris removal project were sufficient to limit worker exposure to asbestos and lead dust hazards to well below any regulatory or guidance exposure limits. Prior to conducting PPDR activities each property was assessed by a licensed Asbestos Inspector to evaluate the potential risk associated with the debris recovery mission. Categories were created according to the amount and disposition of ACM and were assigned to the property during the inspection.